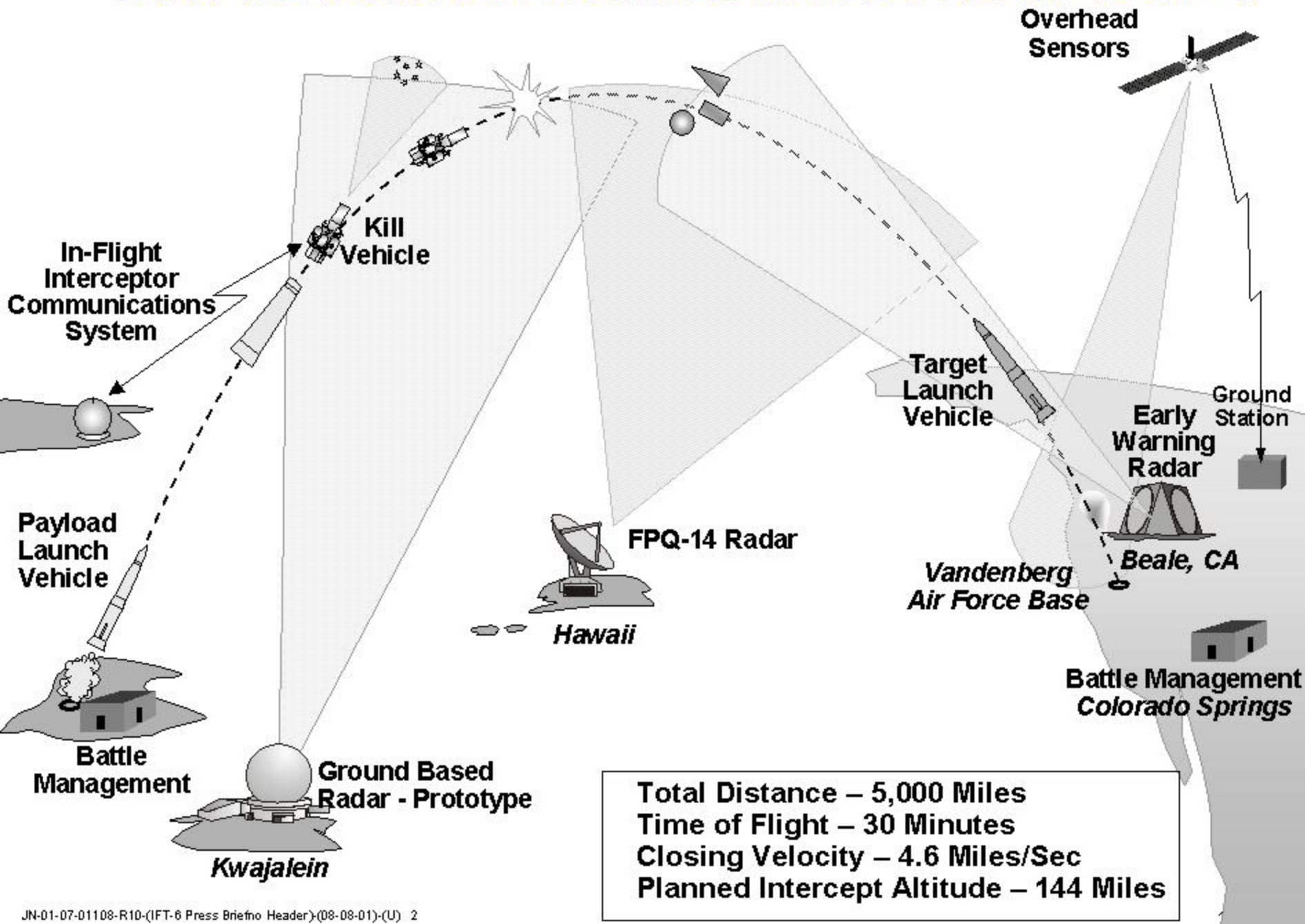# Integrated Flight Test - 6
Preliminary Results
Press Briefing

9 August 2001

MG Willie B. Nance Jr., USA
Program Executive Officer & System Program Director
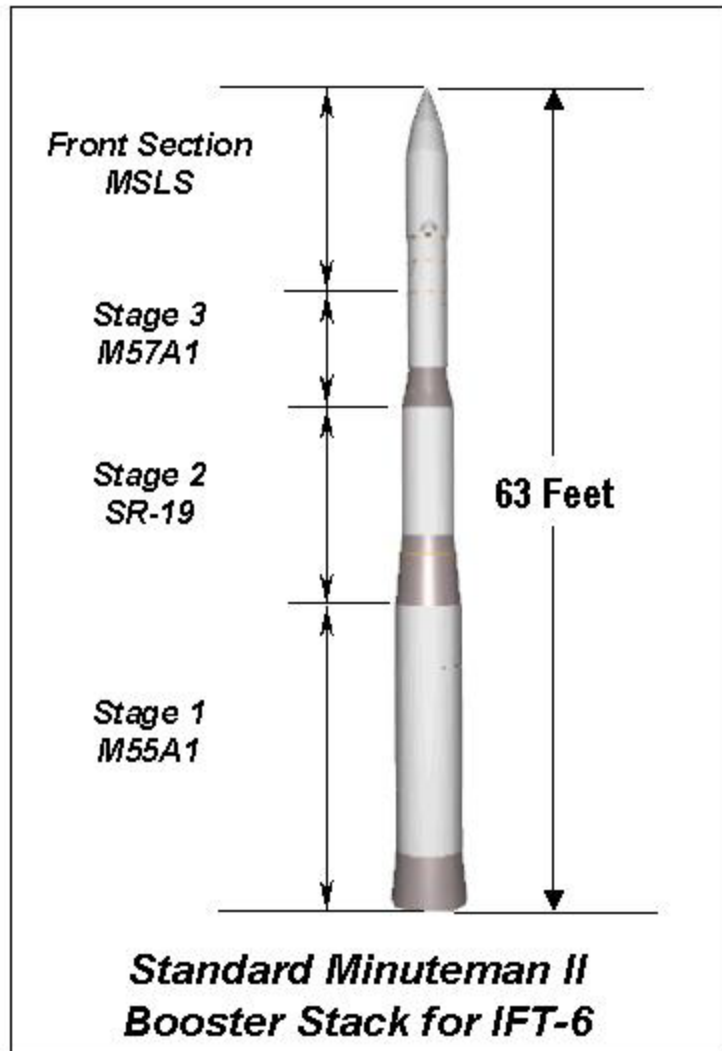
HOW WE CONDUCTED INTEGRATED FLIGHT TEST - 6

Overhead Sensors

Kill Vehicle

In-Flight Interceptor Communications System

Target Launch Vehicle

Ground Station

Early Warning Radar

Beale, CA

Payload Launch Vehicle

FPQ-14 Radar

Vandenberg Air Force Base

Hawaii

Battle Management

Ground Based Radar - Prototype

Battle Management Colorado Springs

Kwajalein

Total Distance – 5,000 Miles
Time of Flight – 30 Minutes
Closing Velocity – 4.6 Miles/Sec
Planned Intercept Altitude – 144 Miles

WHY WE USE TEST SURROGATES

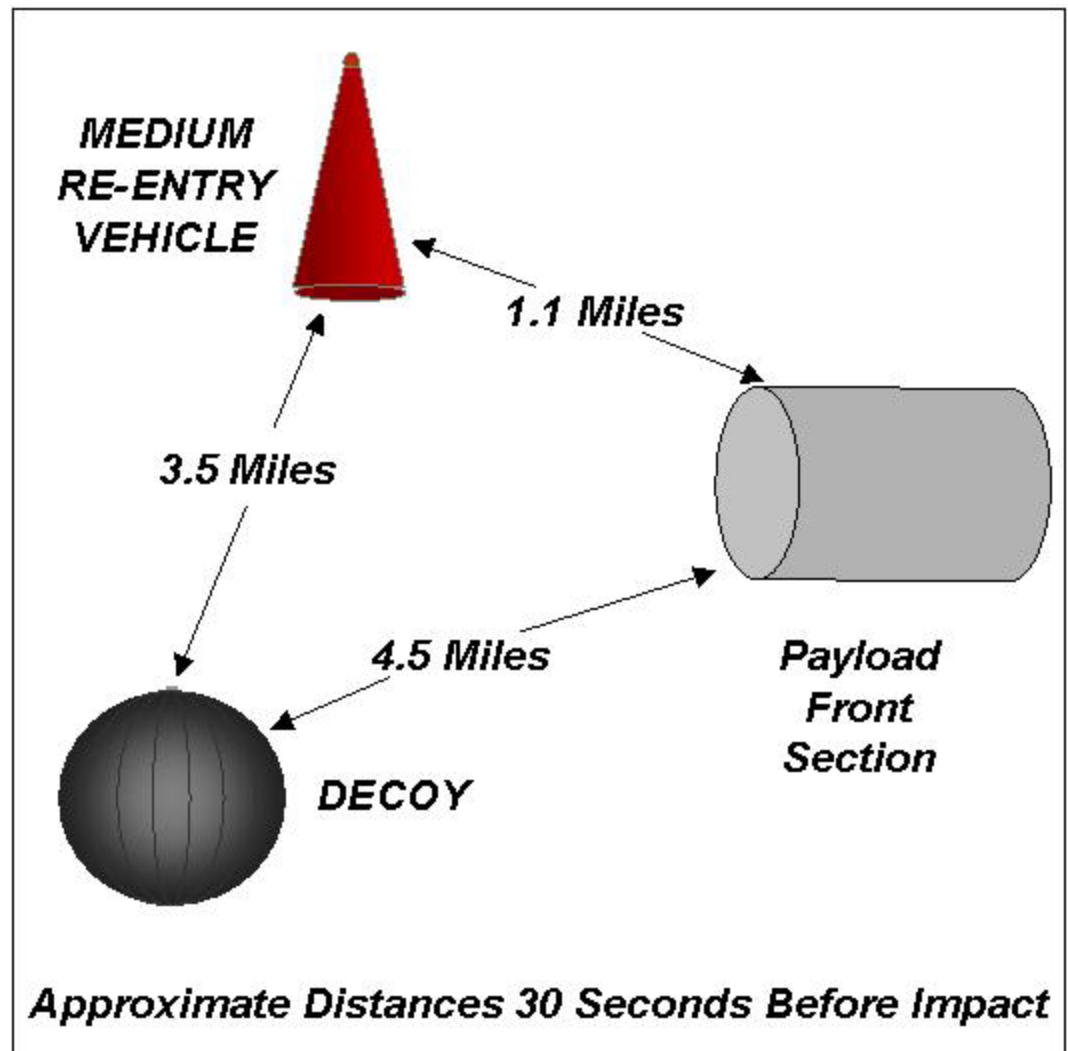| ELEMENT/COMPONENT	TEST CONFIGURATION
Upgraded Early Warning Radar	**Tracks Outbound Target** **Location Not Operationally Representative**
FPQ-14 Radar	**Surrogate Early Warning Radar** **Tracks C-Band Transponder** **Radar Not Operationally Representative**
Ground Based Radar-Prototype	**Smaller Than Operational Radar** **Location Not Operationally Representative**
Payload Launch Vehicle	**Two Stage Booster**
Re-Entry Vehicle	**Instrumented for Truth Data, Safety, and Telemetry**

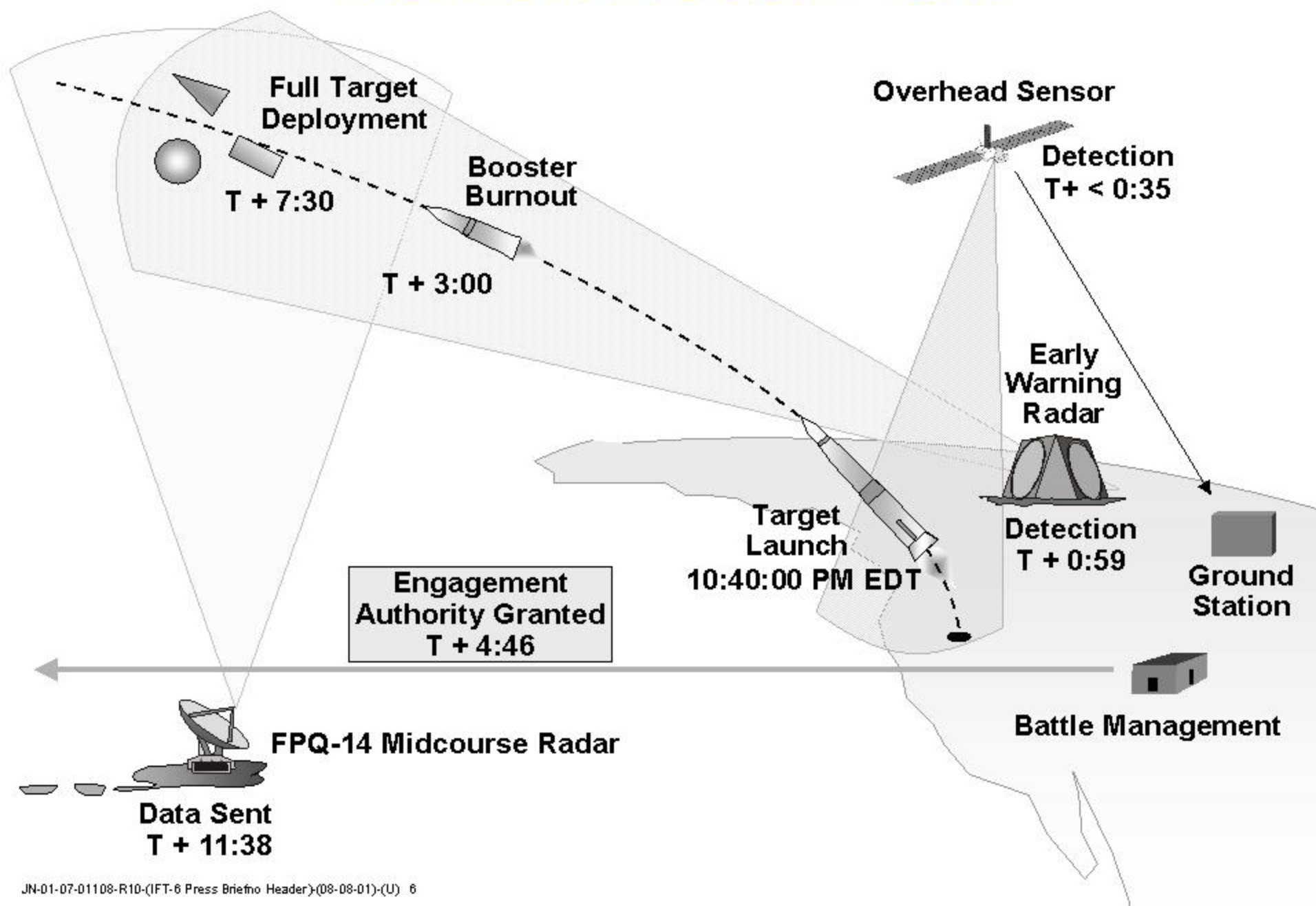# WHY WE USE RANGE ASSETS

- **Safety**
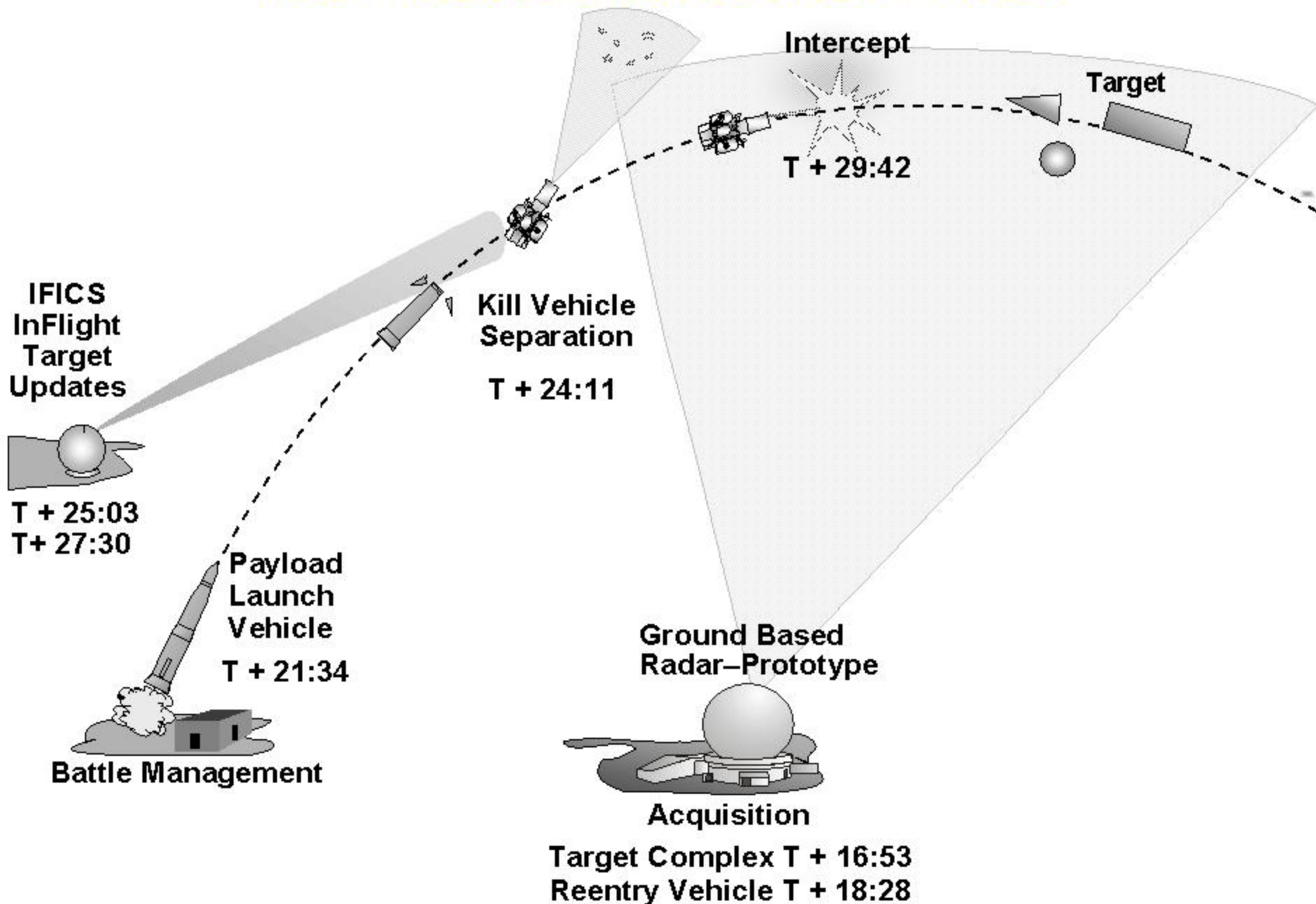
- **Truth**

- **Contingency**

TARGET LAUNCH VEHICLE

TARGET CLUSTER

Front Section
MSLS

Stage 3
M57A1
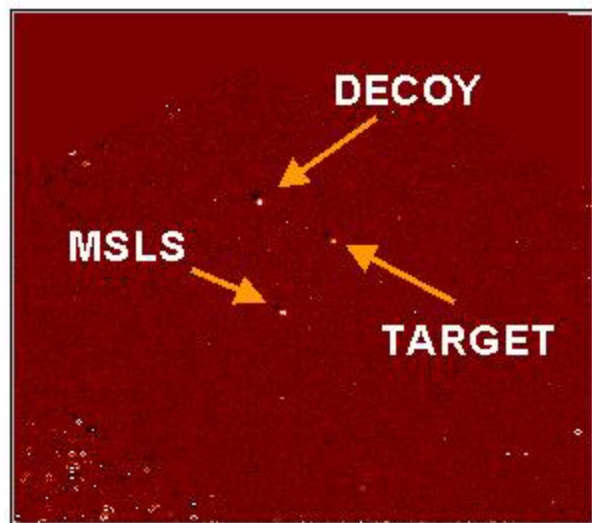
Stage 2
SR-19

63 Feet

Stage 1
M55A1

**Standard Minuteman II
Booster Stack for IFT-6**

*MEDIUM
RE-ENTRY
VEHICLE*

1.1 Miles

3.5 Miles

4.5 Miles

**Payload
Front
Section**

DECOY

Approximate Distances 30 Seconds Before Impact

1/11/99 7:55

TEST RESULTS BOOST PHASE

Full Target Deployment
T + 7:30

Booster Burnout
T + 3:00

Overhead Sensor

Detection T+ < 0:35

Early Warning Radar

Target Launch 10:40:00 PM EDT

Detection T + 0:59

Ground Station

Engagement Authority Granted
T + 4:46

Battle Management

FPQ-14 Midcourse Radar

Data Sent
T + 11:38

TEST RESULTS MIDCOURSE PHASE

Intercept

Target

T + 29:42

IFICS
InFlight
Target
Updates

Kill Vehicle
Separation

T + 24:11

T + 25:03
T+ 27:30

Payload
Launch
Vehicle

T + 21:34

Ground Based
Radar–Prototype

Battle Management

Acquisition

Target Complex T + 16:53
Reentry Vehicle T + 18:28

KILL VEHICLE END GAME

Intercept
T + 29:42

Target
Discriminated
T + 29:11

Target
Acquired
T + 28:08

IFTU 2
T + 27:30

Star
Sighting 2
T + 26:49

IFTU 1
T + 25:03

Star
Sighting 1
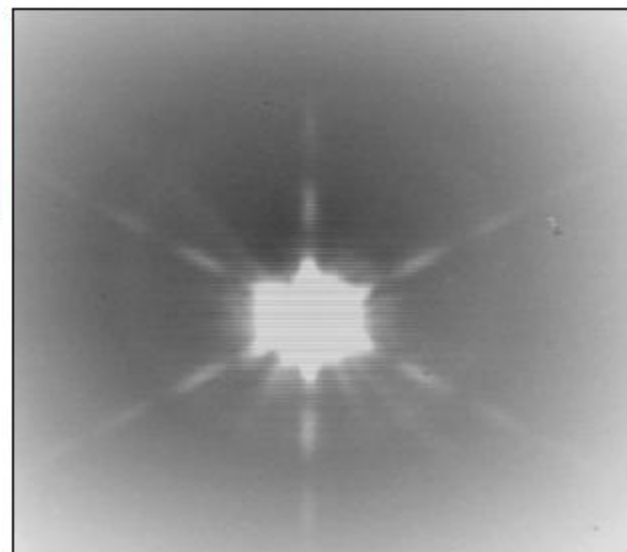T + 24:19

Separation
T + 24:11

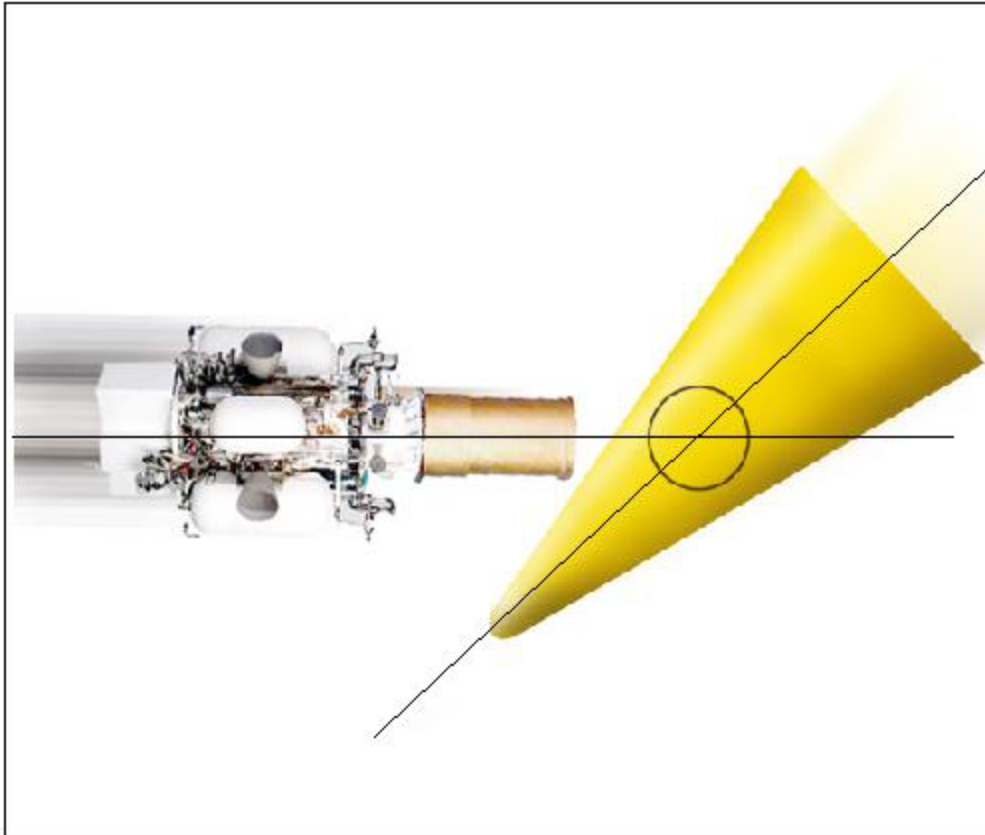**AS SEEN BY KILL VEHICLE**
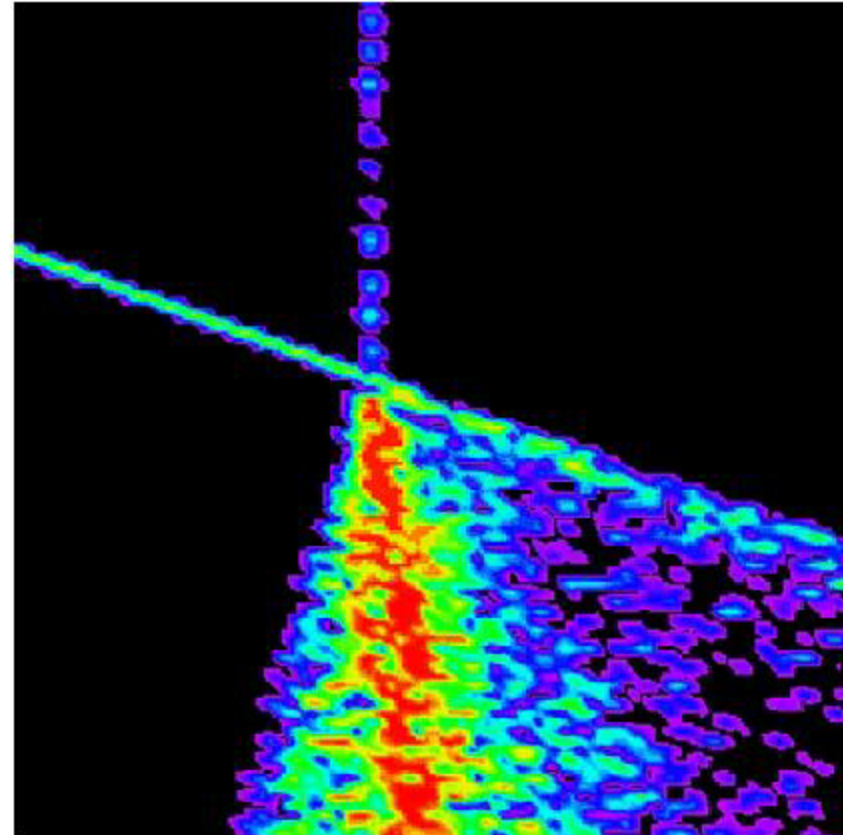
DECOY

MSLS

TARGET

LAST FRAME

INTERCEPT AS SEEN BY SUPER RADOT

INTERCEPT ACCURACY

Point of Intercept

Range Radar

Preliminary Results Indicate IFT-6 Intercept a More Severe Impact Than IFT-3

1/11/99 7:55

INTEGRATED FLIGHT TEST- 6 OBJECTIVES SUMMARY

OVERHEAD SENSOR	
Detect	✓
Acquire	✓
Track	✓

Ground Based Radar-Prototype	
Detect	✓
Acquire	✓
Track	✓
Discriminate	✓
Hit Assess	◯

Battle Management	
Communicate	✓
Integrated Engagement Planning	✓
Weapons Release Authority	✓
Human In Control	✓
In-Flight Interceptor Communications System	✓

Early Warning Radar	
Detect	✓
Acquire	✓
Track	✓

Kill Vehicle	✓
System	✓
Deployment	✓
Star Shots	✓
Acquisition	✓
Exercised Discrimination Algorithms	✓
Divert & Home	✓

Integration of Elements	✓

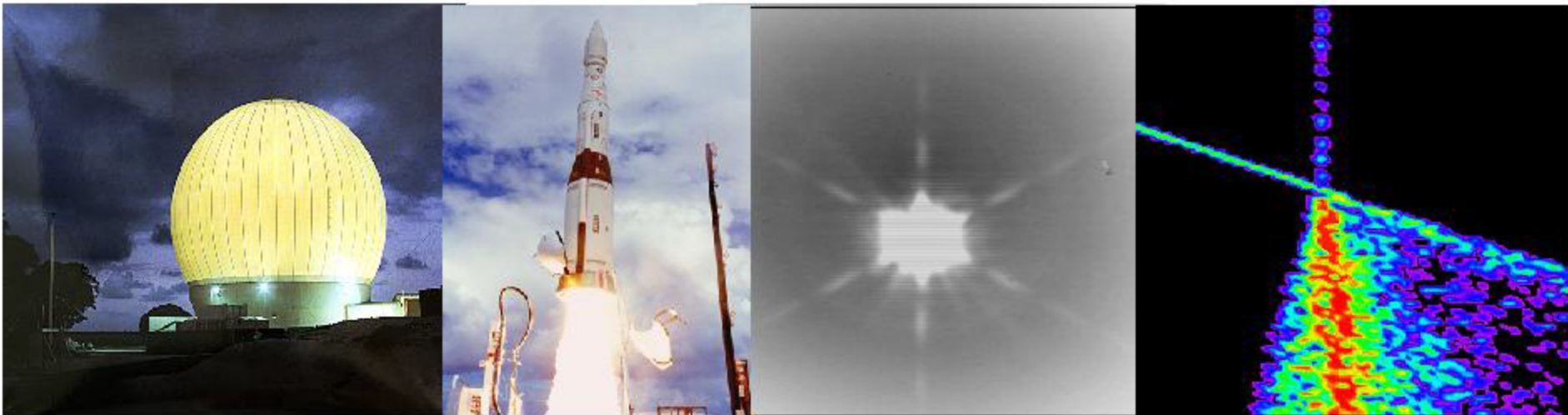# Ground Based Radar-Prototype
Hit Assessment Solution

Cause

- **Software Attempted to Add and Delete the Same Track File in the Same Cycle**

- **Locked the Object Data Base**

- **Prevented Further Track Updates**

Remedy

- **A Software Fix**

- **Allow Addition and Deletion of the Same Track File in the Same Cycle**

1/11/99 7:55

SUMMARY

- **A Successful Test**

- **Builds Confidence We Can Make System Work**

- **Will Fix Hit Assessment Software For Integrated Flight Test - 7**

- **Other Elements Performed As Expected – We Are Continuing To Improve Them**

- **Test Bed Improvements Required to Eliminate Test Surrogates**